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## Using REXX to Automate and Control WinDb™

### *An Application Note*

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### Overview

REXX is a cross-platform programming language that was developed in the 1970's. Although it is a robust language capable of being used for application development, it is primarily used to control other applications and system services. WinDb has been designed with an interface that allows REXX programs to provide control over WinDb. This allows American Arium in-circuit emulators to be used in test and validation environments where automation of a process needed.

This paper is not intended to be a tutorial on the REXX language and assumes that the reader has some knowledge of the language. For REXX information and resources, the reader is highly encouraged to visit the website of the REXX Language Association (<http://www.rexxla.org>).

The interface between REXX and WinDb is very straightforward. REXX programs are able to pass the same commands to WinDb that can be entered on the WinDb command line and receive back any results or output from the execution of these commands. Additionally, any parameters from the WinDb command line that invoked the REXX program can be passed as well.

### Invoking the REXX Program

REXX programs are invoked from the WinDb command line as follows:

```
P0>REXX Myprog.rex(ParameterList)
```

Where:

**REXX** is the WinDb command that invokes the REXX program.

**Myprog.rex** is the pathname of the REXX program being invoked.

**ParameterList** is a comma delimited list of parameters being passed as strings to the REXX program.

### Passing Commands and Receiving Results

As mentioned previously, REXX passes commands to WinDb for execution just as if they were entered directly on the command line. Any result or output from the WinDb command can be returned to the REXX program. This is done in a REXX program using the WinDb function as follows:

```
Result = WinDb(Command)
```

Where:

**WinDb** is the REXX function that issues a command to WinDb.

**Command** is a string which represents a valid WinDb command ( a Command Language command).

**Result** is the REXX variable which receives any result or output from the WinDb command.

Examples:

```
reg_eax = WinDb('eax')           /* Gets the value in the EAX register */
port71 = WinDb('port 71h')       /* Gets the value from I/O port 71h */
vect03 = WinDb('dword 0CL')      /* Gets the Int03 vector at 0000000C */

WinDb('eax = A5A5A5A5h')         /* Puts a value of A5A5A5A5H in EAX */
WinDb('ebx = ' tst1)             /* Puts the value of variable tst1 into EBX */
WinDb('step')                   /* Single steps the processor */
WinDb('reset')                  /* Resets the target system */
WinDb('go til 80io')            /* Run & stop on any access to I/O port 80h */
```

## Passing Command Line Parameters

Parameters from the WinDb command line that invokes a REXX program can be easily retrieved using the ARG instruction. The ARG instruction is used as follows:

**ARG VariableList**

Where:

**ARG** is the REXX instruction to retrieve parameters passed from the WinDb command line.

**VariableList** is a comma delimited list of variables to receive the passed parameters.

Example:

Consider a REXX program that is invoked with the following command line.

```
P0>REXX myprog.rex(0,A5,"Test Interrupts")
```

The following line in a REXX program will retrieve the parameter list.

```
ARG Num1,Num2,Str1,Num3
```

After the above line is executed, the variables in the list will have the following values.

**Num1** will contain '0'

**Num2** will contain 'A5'

**Str1** will contain 'Test Interrupts'

**Num3** will be unchanged from its previous value since the parameter list only contained three items.

## Console Output

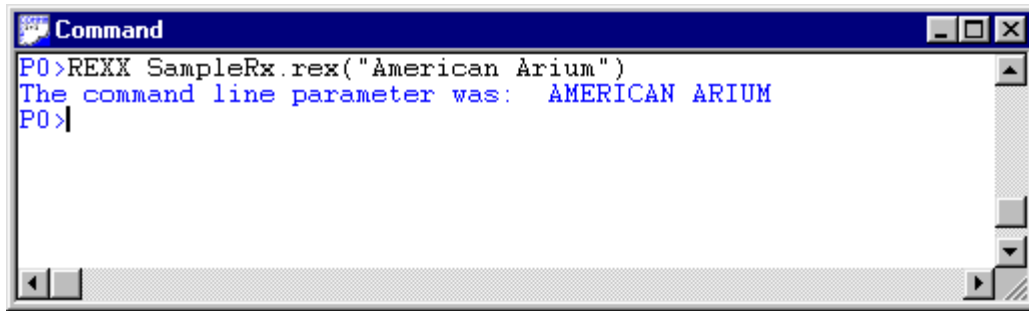
When a REXX program has been invoked from the WinDb command line, console output from the REXX program is directed to the WinDb command window.

Example:

Consider the following REXX program.

```
/* A simple REXX program to display the parameter passed to it */
ARG parmstring
SAY 'The command line parameter was: ' parmstring
```

Figure 1 shows a command line that invokes the above REXX program. The resulting console output appears on the following line.



```
P0>REXX SampleRx.rex("American Arium")
The command line parameter was:  AMERICAN ARIUM
P0>
```

Figure 1: Example REXX program



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